



UNITED STATES PATENT AND TRADEMARK OFFICE

len

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,625	08/05/2003	Kyeong Jin Kim	041501-5455-01	6368
9629	7590	08/31/2007		
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			EXAMINER NGUYEN, DUNG T	
			ART UNIT 2871	PAPER NUMBER
			MAIL DATE 08/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/633,625

Applicant(s)

KYEONG JIN KIM

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-18,22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/10/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/07/2007 has been entered.
2. Applicants' amendment dated 05/08/2007 has been received and entered. By the amendment, claims 11-18 and 22 are now pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,122,024 (to Molsen et al.) in view of United States Patent 6,222,603 B1 (to Sakai et al.) as stated in the final office action.

As to claim 11, Molsen teaches and discloses switchable liquid crystal devices. Molsen shows in Figure 1, a first substrate (transparent substrate 1), a second substrate (transparent substrate 4) opposing the first substrate (transparent substrate 1), a liquid crystal layer (nematic liquid crystals 8) between the first (1) and second (4) substrates, the liquid crystal having

Art Unit: 2871

photopolymerisable material with one or more reactive groups mixed in with a non-chiral nematic liquid crystal and whereby ultraviolet radiation forms a helical polymer network (See Column 4, Lines 32-67)(Applicant's liquid crystal layer between the first and second substrates, the liquid crystal layer having a photo-reactant material and a liquid crystal, wherein the photo-reactant material and the liquid crystal form a polymer network.") and the liquid crystal material (8) is aligned in a direction different from the photo-reactant (9)(see figure 2).

Molsen does not appear to explicitly specify first and second sealants along a periphery of one of the first and second substrates. Sakai et al. disclose a first sealant (6) and a second sealant (11) along a periphery of a pair of substrates (2). Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystal displays at the time the invention was made to modify Molsen in view of Sakai et al. to incorporate first and second sealants along a periphery of one of first and second substrates into a liquid crystal display device to contain the liquid crystal layer and improve an uniform of the cell gap (col. 6, lines 49-50).

As to claims 12-14, the sealant may include thermosetting resins, UV-cured resins, and dual active resins which can harden in the presence of UV rays as well as heating (col. 6, ln 32).

As to claim 15, Molsen et al. disclose an alignment layer for alignment of the liquid crystal layer (3/6).

As to claim 16, a black matrix, a color filter and common electrode (223) all on opposing substrate (220) is conventional elements of a color active matrix display. Therefore, it would have been obvious to one skilled in the art.

As to claim 17-18, Sakai et al. do disclose a spacer (figure 1, 4) to maintain substrate gap. It would have been obvious to one skilled in the art to employ a spacer having a columnar shape.

Art Unit: 2871

It should be noted that the limitation of “by light irradiated to cure ... the first and second sealants” recites a one-step process which does not further limit the structure of the device claims. Therefore, this limitation has not been given patentable weight.

5. Claim 22 is rejected under 35 U.S.C. 1 03(a) as being unpatentable over United States Patent 6, 122,024 (to Molsen et al.) in view of United States Patent 6,222,603 B1 (to Sakai et al.) and further in view of United States Patent 5,872,609 (to Hiji et al.).

As to claim 22, the modification to Molsen does not appear to explicitly specify that the photo-reactant material remains uncured. Hiji teaches and discloses a light control element and method wherein a liquid crystal and photo-setting uncured material are irradiated with coherent light beams to result in an anisotropic gel in which orientation is periodically fixed (Column 6, Lines 14-40). Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Molsen in view of Hiji for an uncured photo-reactant material' so that an anisotropic gel could be formed with periodically fixed orientation.

Response to Arguments

6. Applicant's arguments filed 05/08/2007 have been fully considered but they are not persuasive.

Applicant stated that Molsen et al. fails to teach a feature of “the photo-reactant material and the liquid crystal material form a polymer network such that the photo-reactant material is aligned by light irradiated to cure ... the first and second sealants”. As noted above, such feature

Art Unit: 2871

has not been given patentable weight; therefore, the limitation of claim 11 can be read over the Molsen et al. reference.

Accordingly, the above rejection of those claims stand.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
08/20/2007

/Dung T. Nguyen/
Dung Nguyen
Primary Examiner
Art Unit 2871